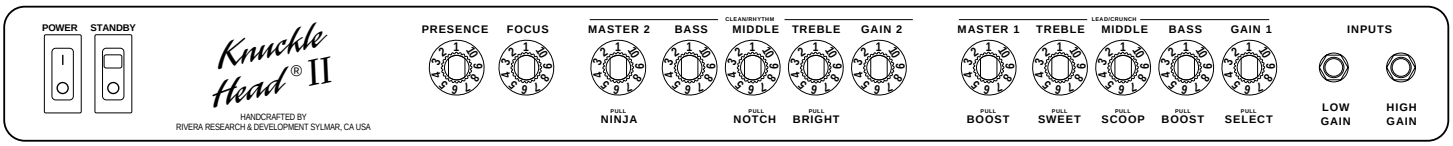
RIVERA

KNUCKLEHEAD® II

OWNER'S MANUAL



Packing Information

Unpacking

Before you plug in, inspect your KnuckleHead II amp for any damage. Your amp was inspected and sound-tested before shipment, but transportation can sometimes be tough. Check that the FS-7 Footswitch and power cord have been shipped with the amp. If parts are missing, or if any damage has occurred, contact your dealer.

Packing Materials

We designed the original box and packing materials to protect your amp during shipment. Save them. If you ever need to send your amp to us or to anyone else, the original box and packing materials will ensure safe transit.

Safety Precautions

Throughout this manual, the lightning flash with an arrowhead symbol within a triangle is intended to alert you to the presence of uninsulated "dangerous voltages" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within a triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature that accompanies the product. There are no user-serviceable parts inside of this amplifier.

Warning: To avoid the risk of shock or fire, do not expose this amplifier to moisture. Do not remove the chassis from its cabinet, or remove metal covers from chassis parts. Removing the chassis from its cabinet exposes extremely dangerous high voltages. There are no user-serviceable parts inside. Hazardous voltages are present inside the chassis. Refer all servicing to qualified personnel.

Caution: To avoid a fire hazard, always replace the fuses with the same type and rating.

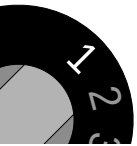
Caution: Always replace the line cord (mains supply) with the proper type.

Caution: Always turn off the amplifier before making or unplugging any speaker connections.

Always transport your amplifier securely, preferably in a suitable flight case or packing carton. Before operating your amplifier, be sure the speakers used are properly connected. For countries where 220 to 240 volts AC is encountered, make sure that you have the correct power cord. Our 230-volt export unit can be used with any of these voltages. For Japan 100VAC models, all instructions for the 115VAC models apply.

In the event that you have questions, comments, or suggestions, please contact us at:

Rivera Research & Development
13310 Ralston Ave., Sylmar, CA 91342 USA
Phone: (818) 833-7066 • Fax: (818) 833-9656
Email: support@rivera.com • http://www.rivera.com



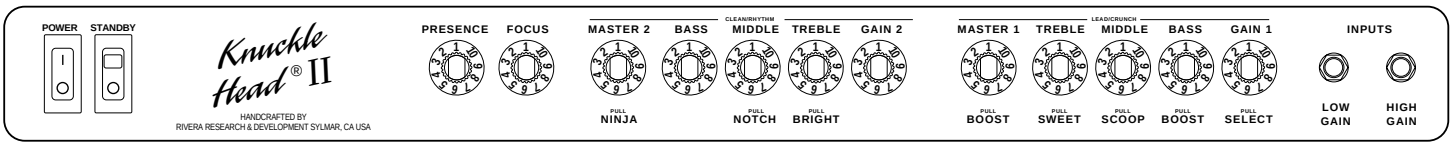
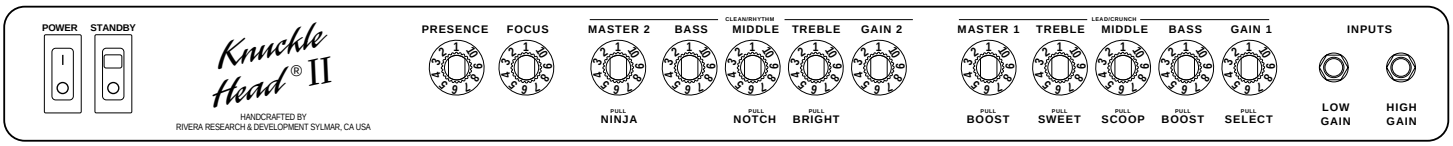


TABLE OF CONTENTS



Your Rivera Amp Is An Important Part Of Your Sound

Your sound is your signature, your mark, your voice. An amp only deserves to have your guitar plugged into it if it can deliver the tone you want—and, of course, the dependability you need. It's as simple as that. And it's exactly why you bought your RIVERA amp. For that, we thank you, and we're confident that you'll enjoy your amp for years to come.

Many factors go into creating a great amp—experience, an understanding of what guitarists want, and a lot of hard work. You'll notice that tone isn't on any parts list. Roadworthiness isn't, either. And there's no law saying that an amp must sound good or be well-made. But we dedicate ourselves to making the best-sounding, most reliable amplifiers anywhere. That's why we use only the highest-quality components, regardless of price. Such features as metal jacks, ultra-strong dadoed cabinet construction, and highest-quality electronic components are part of our uncompromising approach. They're chosen for their precision, strength, and ability to withstand the rigors of years of use—and occasional abuse—on the stage and in the studio. No compromises are made because cutting any corners—no matter how small—means settling for second best.

This requires dedication to you, the guitarist, and a belief that an amp is more than a collection of parts. It's part of your sound.

Please fill in the following information for future reference:

Model Name: KnuckleHead II

Model Number: K-2100

Serial Number: _____

Dealer's Name: _____

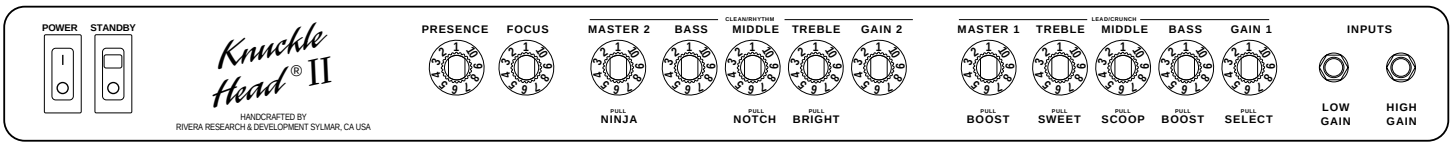
Dealer's Address: _____

Date of Purchase: _____

RIVERA

13310 Ralston Ave.,
Sylmar, CA 91342 USA
Phone: (818) 833-7066
Fax: (818) 833-9656

Email: support@rivera.com
http://www.rivera.com



WARRANTY

Subject to the Obligations and Exclusions found below, this RIVERA product is warranted against manufacturing defects in material and workmanship for the period of one (1) year from the date of purchase, with the exception of tubes, which carry no warranty, and loudspeaker drivers, which are covered for 90 days.

The warranty period commences on the date of purchase by the original user. Performance under this warranty must be obtained at one of the following: a RIVERA Authorized Service Station, by returning the unit to the RIVERA factory with prior authorization, or (in countries outside of the United States) by a representative RIVERA distributor. A list of RIVERA Authorized Service Stations can be obtained from RIVERA, 13310 Ralston Ave., Sylmar, CA 91342, USA, ATTN: Warranty Service. Telephone (818) 833-7066; telefacsimile (818) 833-9656.

Obligations

1. This warranty will be honored only on the presentation of the original proof of purchase.

2. Transportation of the product to the service station or RIVERA factory is the responsibility of the user unless specifically stated otherwise in this warranty. RIVERA will pay for return shipping charges if the repairs are covered by the warranty.

Exclusions

1. This warranty shall not cover adjustment of customer-operated controls as explained in the appropriate model's instruction manual, or products that have been altered, replaced, or have missing serial numbers.

2. This warranty shall not apply to the appearance of accessory items including, but not limited to, cabinets, cabinet parts, or knobs.

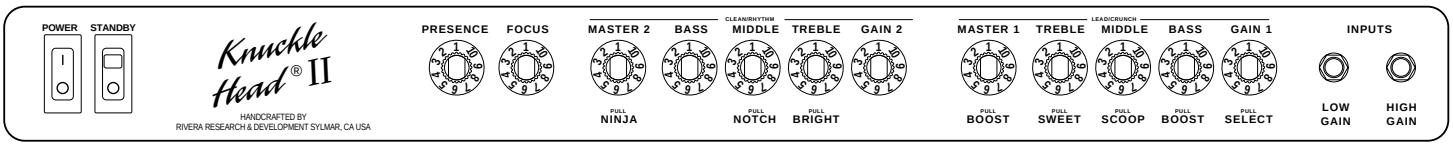
3. This warranty does not apply to uncrating, setup, installation, or the removal and reinstallation of products for repair.

4. This warranty shall not apply to repairs or replacements necessitated by any cause beyond the control of RIVERA including, but not limited to, any malfunction, defects, or failure caused by or resulting from unauthorized service or parts, damage resulting from improper packaging when returning product, damaged or broken tubes, incorrect line voltage, improper maintenance, modification or repair for the user, abuse, misuse, neglect, accident, fire, flood, or other Acts of God.

5. This warranty shall not apply to any loudspeaker drivers that have been damaged due to thermal destruction, or physical destruction such as moisture, rips, tears, shock, or transport.

6. Responsibility for any repair of any RIVERA product sold outside of U.S. boundaries is borne by the RIVERA representative in that particular country or territory. Also, the warranty term and conditions may be different from those stated above. Please contact the RIVERA distributor or dealer in your country for more information.

The foregoing is in lieu of all other expressed warranties, and RIVERA does not authorize any party to assume for it any other obligation or liability. In no event shall RIVERA be liable for special or consequential damages arising from the use of this product, or for any delay in the performance or this warranty due to causes beyond our control. Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of consequential damages, so the above limitations on implied warranty and consequential damages may not apply to you. This warranty gives you specific legal rights. You may have other rights that vary from state to state.



No Time To Read This Manual? At Least Read This Page Now!

Before you plug in:

Take a quick look inside the back of your amp. Make sure of the following—

1. The tubes are securely seated in their sockets (see page 19 for further information on checking for loose tubes).
2. The internal speaker's cord is plugged into the Speaker 1 output (this jack must always be used first).
3. The power cord is plugged in.
4. The FS-7 footswitch is plugged in (this is optional).

Now look at the front to make sure:

1. The Gain and Master controls are set at low levels (2 is a good starting point).
2. The Power switch is off (the lower half is pushed in).
3. The Standby switch is set to standby mode (the lower half is pushed in).

Plug in!

Now plug the amp into the wall, plug your guitar into either input jack, and set your controls to one of the Quick Start settings outlined here. Then turn on the Power switch. Wait for about a minute for the tubes to warm up. Turn on the Standby switch. Now it's time to rock.

After you've played with your KnuckleHead II for a while, check out the rest of the manual for some good tips on getting the most out of your amp.

Quick Start Settings

If you're looking for a good starting point, try these settings. Remember that every guitar sounds different, so try both inputs, and adjust the reverb and presence to suit your taste.

Lead: Massive Rectified
Clean: Strat Rhythm

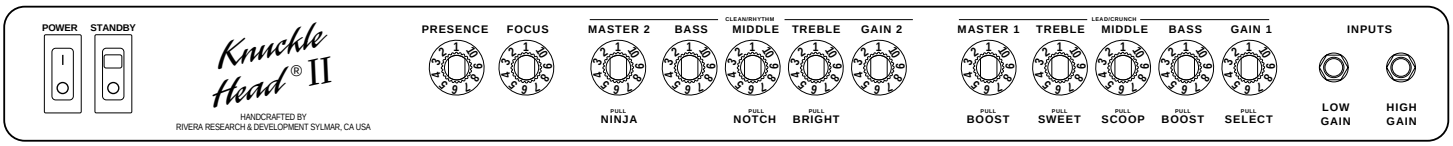
PRESENCE	FOCUS	CLEAN/RHYTHM MASTER 2	BASS	MIDDLE	TREBLE	GAIN 2	LEAD/CRUNCH MASTER 1	TREBLE	MIDDLE	BASS	GAIN 1	INPUTS
7	7	10	5	3	7	3	5	6	1	4	10	Use Either
					PULL		PULL	PULL		PULL		
		PULL NINJA		PULL NOTCH	PULL BRIGHT		PULL BOOST	PULL SWEET	PULL SCOOP	PULL BOOST	PULL SELECT	LOW GAIN / HIGH GAIN

Lead: Munky Grind
Clean: Studio Clean

PRESENCE	FOCUS	CLEAN/RHYTHM MASTER 2	BASS	MIDDLE	TREBLE	GAIN 2	LEAD/CRUNCH MASTER 1	TREBLE	MIDDLE	BASS	GAIN 1	INPUTS
7	7	10	5	3	8	4	5	8	1	9	8	Use Either
				PULL	PULL		PULL	PULL		PULL		
		PULL NINJA		PULL NOTCH	PULL BRIGHT		PULL BOOST	PULL SWEET	PULL SCOOP	PULL BOOST	PULL SELECT	LOW GAIN / HIGH GAIN

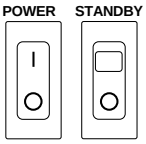
Lead: Eighties Rock
Clean: Fat Blues Lead

PRESENCE	FOCUS	CLEAN/RHYTHM MASTER 2	BASS	MIDDLE	TREBLE	GAIN 2	LEAD/CRUNCH MASTER 1	TREBLE	MIDDLE	BASS	GAIN 1	INPUTS
7-9	4-7	4	4	3-6	6	9	5	7	5	7	6-7	Use Either
		PULL					PULL	PULL				
		PULL NINJA		PULL NOTCH	PULL BRIGHT		PULL BOOST	PULL SWEET	PULL SCOOP	PULL BOOST	PULL SELECT	LOW GAIN / HIGH GAIN



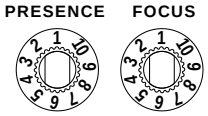
FRONT PANEL

Power This is your main power switch. The on position is indicated by the light being illuminated. The off position is marked by the "0" on the switch. Before turning the amp on, always check that a speaker is connected and that the power cord is firmly plugged into the amp and the outlet.



Standby By turning the Power on and the Standby off (the down position, labeled with a "0"), you can warm up the amplifier before applying full voltage to the preamp and power output tubes. This prolongs tube life. Using the Standby switch when you're taking a break also helps to extend the tubes' life, plus it keeps the amp constantly at the ready. Just flip the Standby switch to the up ("I") position, and you're ready to play.

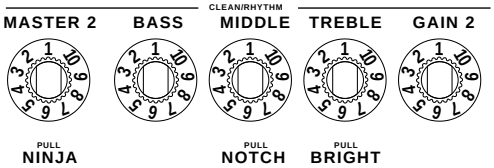
Presence The Presence control is incorporated as a vital part of the power amp section. Think of it as a final brightness control after all the EQ, distortion, and effects.



Focus This control is a RIVERA exclusive that actually lets you change the speaker's response characteristics, from tight to loose. The effect can give closed-back cabinets a sound more akin to an open one, and vice-versa, plus you can "custom blend" the amount of hardness your final sound has.

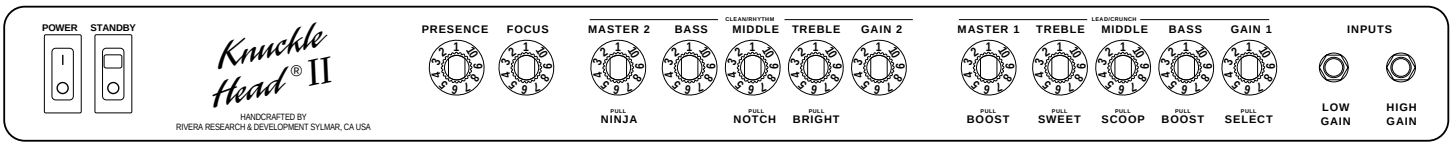
Clean/Rhythm channel The Clean/Rhythm channel is extremely flexible, with a flavor that brings to mind the great classic American tones and textures. You can get some impressive lead overdrive distortion out of the Clean/Rhythm channel, and as a rhythm channel it brings out every subtlety of your playing. The range of tones can be anywhere from sparkling-clean to perfect for bluesy rhythm—the kind of sound that has an attitude and gets meaner as you pick harder.

Master 2 (with Pull Ninja switch) The Clean/Rhythm channel has a special EQ circuit that works in conjunction with the distortion circuit to sweeten the tone. Therefore, Master 2's effect goes beyond loudness control. Try it with different Gain 2 and Middle settings to adjust the amount of "singing" and "grit." The Ninja Boost, activated by pulling out the Master 2 knob, is a sweet-sounding boost characterized by a more subtle effect on the harmonics than the Lead/Crunch channel's Boost control while adding sustain. The Ninja Boost helps to drive the power amp, and the best description of its influence over the tone is that it thickens it



Bass The "chunk" and support that form the backbone of your tone come from this control.

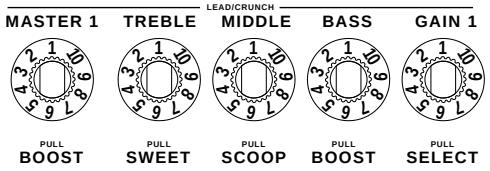
Middle (with Pull Notch switch) The midrange circuit has a slight notch in the frequency spectrum at about 550 Hz, and turning the knob alters the depth of that notch. Its Pull Notch switch shifts the frequency center of that notch down to about 250 Hz. (For reference, most 1950s tweed amps have their notch centered at 550 Hz, while classic "blackface" amps have theirs centered at 250 Hz.) Experiment with this, especially if you're looking for a uniquely expressive rhythm texture.



Treble (with Pull Bright switch) This treble control is similar in operation to the one on the Leac/Crunch channel. In addition, it has a built-in Pull Bright switch. When pulled out, it adds bright highlights to the tone.

Gain 2 The Gain 2 knob regulates the preamp's volume and works with Master 2 to set the level and distortion amount. A simple rule of thumb is, the higher Gain 2 is set, the more distortion you get.

Lead/Crunch channel Both channels are voiced differently, and the Lead/Crunch channel is definitely geared toward creating impressive overdrive (think of a "distortion" tone). Grit, grunge, dirt—whatever you're looking for in the distortion department is here, from sweet and singing to hard-driving to maximum sustain.



Note: Like the controls on all classic amps, the Bass, Middle, and Treble interact, creating smooth, musical tone changes. All three controls operate with even response throughout their ranges.

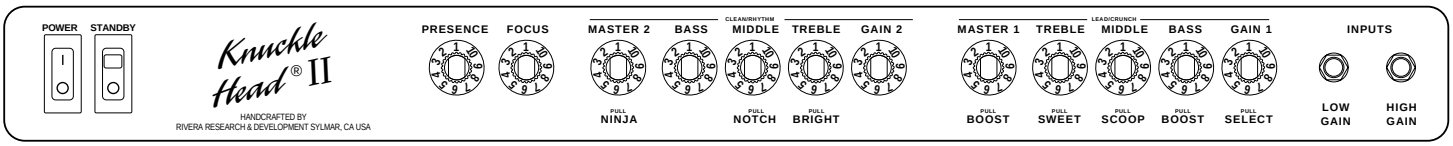
Master 1 (with Pull Boost switch) Think of Master 1 as a sort of governor that sets the maximum loudness for the channel. Also, think of it as the second half of what Gain 1 does. With Gain 1 turned down and Master 1 up, there's less distortion than if you crank up Gain 1 and set Master 1 lower. The Master 1 control comes after all distortion and tone-shaping on the Lead/Crunch channel, so its level doesn't have a bearing on your basic tone. When you pull out the Boost switch on the Lead/Crunch channel, it adds a whole range of harmonics, and not just gain. This is easy to hear by playing a power chord and comparing its sound with the switch pushed in and pulled out. With the switch activated, the tone blooms, going from fat to ferocious.

Treble (with Pull Sweet) Whether you're looking for edge, slash, or just a little shimmer, this knob's for you. Like the Bass control, the apparent effect of the Treble changes with the loudness and distortion you dial in. The Pull Sweet switch increases the high-end brightness post-distortion, adding an additional distortion edge.

Middle (with Pull Scoop) The midrange circuit provides the "meat" that fills out your sound. It has a slight notch in the frequency spectrum at about 500 Hz when the control is pushed in, and 750 Hz when the control is pulled out. Turning the knob alters the depth of that notch, letting you dramatically change the overall voicing of your tone.

Bass (with Pull Bottom) The "chunk" and support that form the backbone of your tone come from this control. Its effect on your overall sound will be different at high and low volumes due to the speaker's characteristics and how much distortion you use. Pull Bottom extends the bass and bottom-end range. This is essential for adding the huge wall of bottom end that modern players need, especially with 7-String instruments. The bass EQ curve has been specially tailored to complement the maximum bass response of the RIVERA K-Cab speaker enclosure.

Gain 1 (with Pull Channel Select switch) Although it's labeled "Gain," this control does a lot more than determine how loud the Lead/Crunch channel is. It regulates the preamp's volume and works with Master 1 to set the level and distortion amount. A simple rule of thumb is, the higher Gain 1 is set, the more distortion you get. The pull switch selects which channel is active. Its circuitry is designed so that you don't hear a pop or click when the channel is changed. (The FS-7 footswitch also selects chan-



nels; Gain 1's pull switch must be pushed in for the FS-7 to choose channels. See info on the FS-7 and its functions.)

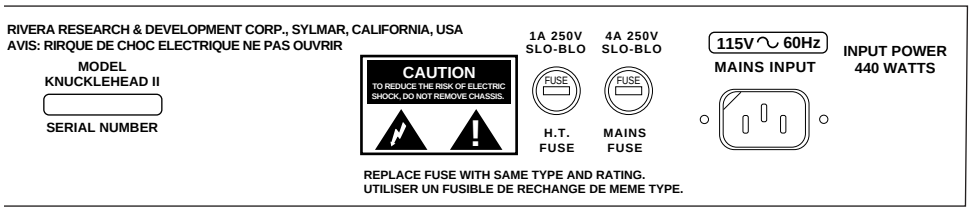
Low Gain input This is a low-sensitivity input. Guitars plugged into it have more headroom before distortion sets in (meaning that you can crank up a channel's volume a little louder before you experience preamp distortion). This is a good choice for a clean overall sound, and is especially well-suited to active pickups or guitars equipped with preamps.

High Gain input This is a high-sensitivity input. If your guitar has hot pickups, then plugging into it makes it easy to overdrive the preamp section, creating harmonic distortion. Guitars equipped with low-output pickups seem hotter than usual when plugged into this input.

REAR PANEL

Mains Input

Your KnuckleHead II has a detachable power cord that connects to the chassis AC connector labeled Mains Input. Always use this cord and, in the event that the power cord requires replacement, replace it with the same type of power cord. Consult your RIVERA dealer for further information. Be sure to use a grounded electrical mains power supply socket whenever possible. These outlets have a grounding pin in addition to the normal line and neutral pin. The power cord supplied with your KnuckleHead II has a 3-pin plug. Do not cut off or damage the ground pin. If the available electrical outlet is of the older 2-pin type, use a suitable ground-lift adapter.



The U.S.A., Canada, and Japan share a common CSA/UL-style cord. Most of Europe and Scandinavia utilize a Euro plug and have a SEMKO/VDE-style cord. Australia uses a different type of plug, as does England.

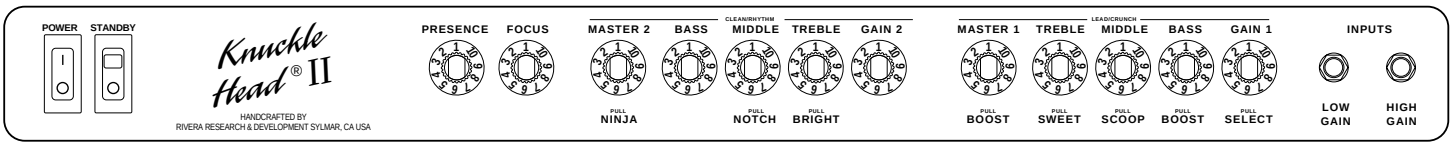
Note: Avoid using long extension cords. Long cords have sufficient resistance to electrical current that the voltage arriving at your amp can be significantly reduced. This can have a bad effect on your tone.

Mains Fuse

This AC line fuse protects your amplifier from damage due to shorts, momentary surges, and defective power tubes. In the event of a fuse failure, always replace it with the same type of fuse.

Note: Always turn the amp off and wait about five minutes before replacing a fuse. This allows the parts to cool and high voltages to dissipate.

For 100VAC versions, the Mains Fuse is: 5 Amp, 250 Volt Slo-Blo type (size 3AG, or MDL)
For 115VAC versions, the Mains Fuse is: 4 Amp, 250 Volt Slo-Blo type (size 3AG, or MDL)
For 230VAC versions, the Mains Fuse is: T 2A (time-delay, 5mm x 20mm size)



HT Fuse

The power amplifier circuit has its own fuse for protecting the output section from short circuits and transient current peaks that exceed the normal current draw. These conditions are usually caused by a bad tube. When a short circuit or transient peak causes the fuse to blow, the output tubes should be checked and replaced, if necessary.

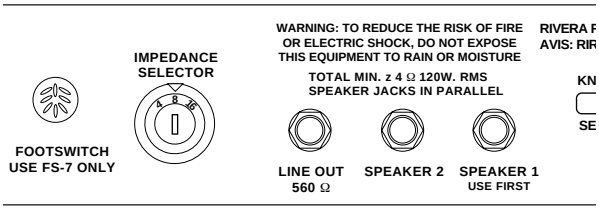
For 100VAC and 115VAC versions, the HT Fuse is: 1 Amp, 250 Volt Slo-Blo type (3AG, or MDL)
For 230VAC versions, the HT Fuse is: T1A (time-delay, 5mm x 20mm size)

Repeated blowing of this fuse is a clear indicator of a defective output tube. Always use the correct fuse value when replacing the HT Fuse.

If the Mains Fuse or the HT Fuse repeatedly blows, refer your amp to your local RIVERA dealer or contact us at (818) 833-7066 for further service assistance.

Speaker outputs

A speaker must always be connected to your KnuckleHead II. The amp is designed to deliver at least 120 watts to a 4-ohm speaker load. If it has to drive speaker loads lower than 2 ohms, its output transformer or other components could be damaged. You can use 8- or 16-ohm extension cabinets, either alone or in pairs (one connected to each speaker output).



Never use a 2-ohm speaker cabinet alone, or a pair of 4-ohm extension speaker cabinets together. The only time you may run the amp without a speaker connected is if you have a proper “dummy” impedance load box plugged into the speaker output. Using a dummy load protects the output transformer, but prolonged use shortens the life of the amp’s output tubes.

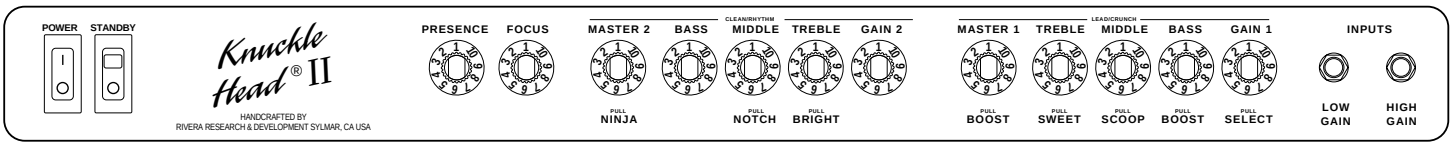
Always use a heavy-gauge speaker cord. A shielded guitar cord can’t handle the power that your amp provides, and therefore won’t sound right—plus it may actually harm your amp. Refer to the connection diagrams for further information.

Note: Never use a speaker output to connect directly to the input of a mixer, a tape recorder, a slave amp, or headphones. For further information, refer to the hook-up diagrams for proper connection with extension speaker cabinets.

Line Out

Your KnuckleHead II can drive another KnuckleHead II, power amp, or other guitar amplifier. The Line Out is post-power amp, so every bit of tone from your preamp, effects (if used), and power-amp circuitry is sent from this jack. Use a shielded cord connected between the KnuckleHead II’s Line Out and the input of a second amplifier (check that amp’s manual—it may recommend a specific input).

The Line Out can also be used to feed a signal to a tape recorder or mixer. Although the recorder or mixer doesn’t receive the tone that comes from the speaker, it does receive all of the signal from every other stage of the amp, and for live-performance recording, it does an excellent job of isolating your guitar sound.



Note: Do not connect the Line Out to speakers or headphones. For further information, refer to the hook-up diagrams for proper connection.

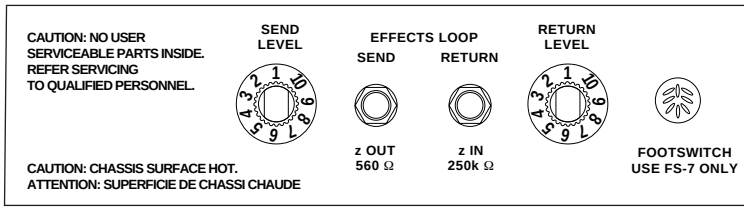
Impedance Selector

Set the Impedance Selector to match the impedance load of your cabinets. Here's how:

4-ohm setting = One 4-ohm cabinet or two 8-ohm cabinets (one connected to each speaker output)
8-ohm setting = One 8-ohm cabinet or two 16-ohm cabinets (one connected to each speaker output)
16-ohm setting = One 16-ohm cabinet connected to the Speaker 1 jack

Note: Loads less than 4 ohms may harm your amp. If you aren't sure if your speaker load is correct, contact your RIVERA dealer, or call RIVERA Customer Service.

Footswitch jack



This 8-pin DIN plug is designed to work specifically with the included FS-7 footswitch. Your KnuckleHead will function perfectly without a footswitch. However, the footswitch provides a hands-free way to switch channels and select boost functions. Its three switches control the following:

Channel Select Gain Boost for Lead/Crunch Channel Ninja Boost for Clean/Rhythm Channel

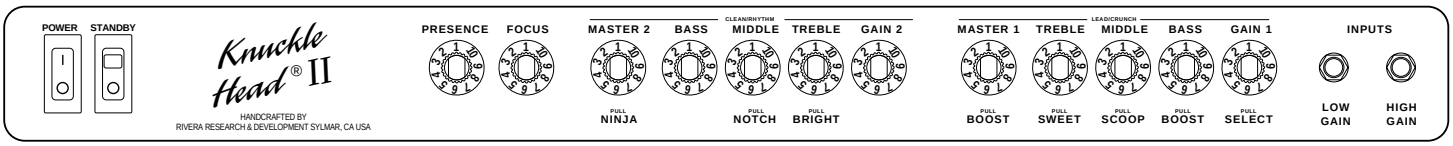
Note: If you are using the FS-7 footswitch, make sure that all pull switches on the amp's front panel are pushed in. If any of the pull switches is pulled out, then the corresponding footswitch function will not operate. Also, the switches and their LEDs are driven by the amplifier's power. There is no battery to replace inside the FS-7.

Effects Loop

Of course, you can use pedals and rack-mounted effects between your guitar and the amp. In fact, that's where most wah-wahs and other pedals sound exceptionally good. However, rack signal processors are often best suited to being placed after the preamp's tone-shaping circuitry. Your KnuckleHead II's Effects Loop is designed to give you the best match between the amp and the processor by allowing you to set the level of the signal going to the effect, as well as the one coming back. Therefore, you can tailor your amp/effects levels for best signal-to-noise ratio and the amount of distortion you want.

Note: The Effects Loop Send can be used to route a signal to a guitar tuner.

The Effects Loop comes after the preamp section. In addition, its low-impedance circuitry lets you drive everything from the simplest stomp-box effect to the most sophisticated pro signal processor with excellent results. It's also fully buffered, meaning that it can drive long cords and line-level gear and mixing consoles. (Because the signal is electrically unbalanced, you can use an unbalanced-to-balanced output transformer to connect to equipment requiring a balanced input.)

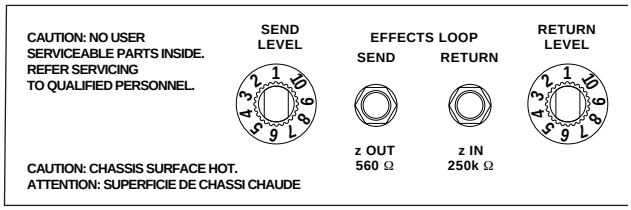


Setting Effects Loop levels

1. After you connect the amp's Send and Return with the signal processor's input and output, set the amp's Send Level and Return Level between 1 and 2.

2. Plug in your guitar, turn on the signal processor, and then turn on the amp (or flip the standby switch).

3. Set the amp's Effects Loop Send Level and the signal processor's input level so that you don't overload the processor. Keep your ears open for unwanted distortion from the signal processor (you'll know it by its crackly, unmusical sound). Whack a few chords on your guitar to check that your settings are correct.

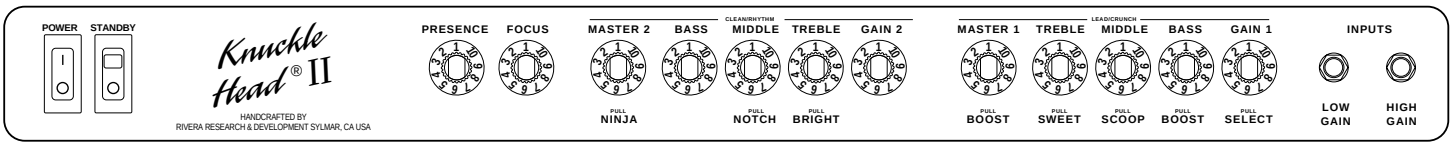


4. Now turn up the Effects Loop Return knob until the proper volume and overdrive are dialed in. You'll probably have to experiment with the signal processor's output level until you get the best sound and lowest amount of noise.

5. Make sure that you set your straight/effects blend at the signal processor, since all of your preamp's signal is passed through the Effects Loop. Do not use an effects-only output to return from the processor to the amp. Always use the "mix" output, if the unit has one.

The Effects Loop Send is configured so that it is always active, so you can use it as a variable output.

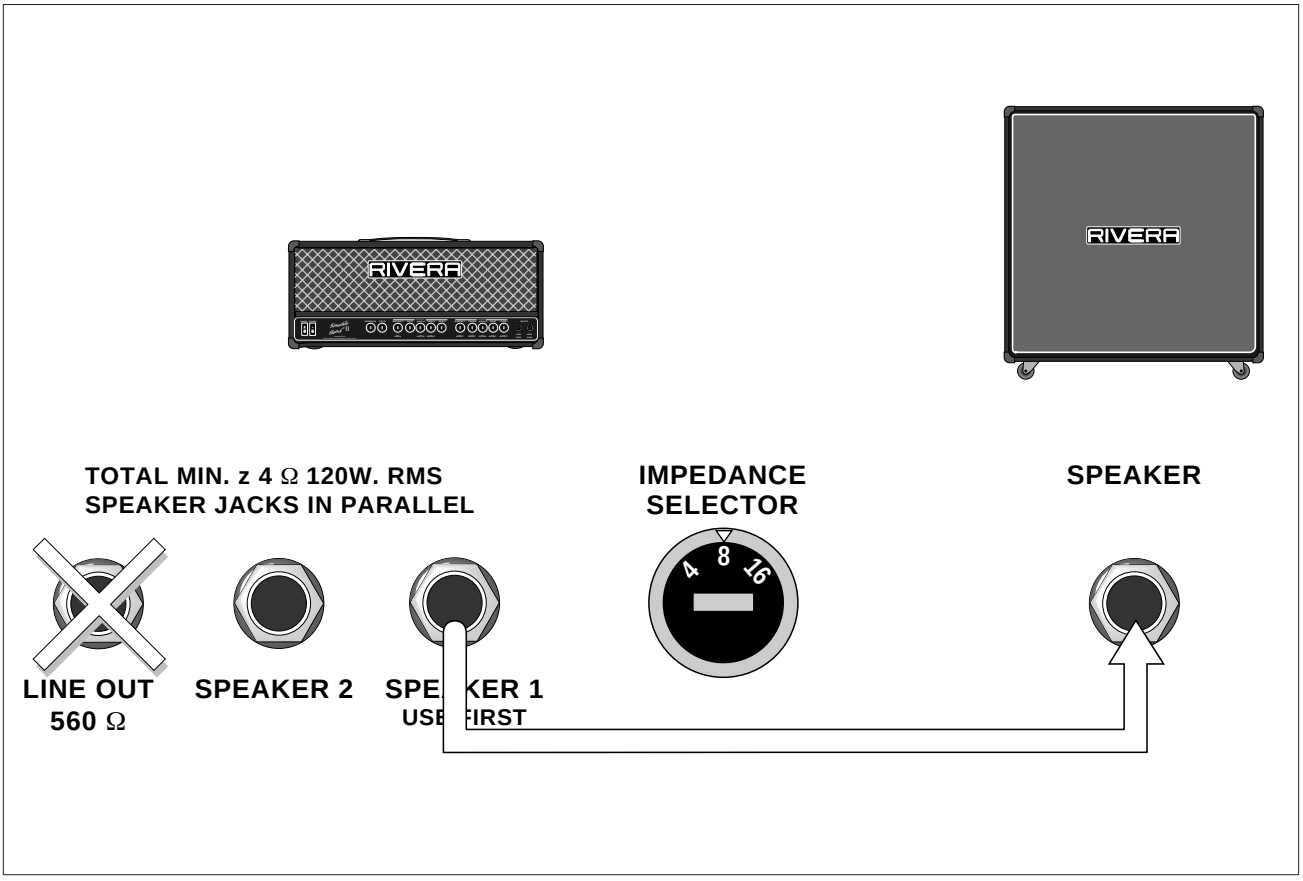
Note: If you use the Send to drive slave amps, etc., and have nothing plugged into the Return jack, the signal still passes from the preamp to the power amp.



CONNECTING THE KNUCKLEHEAD II WITH OTHER GEAR

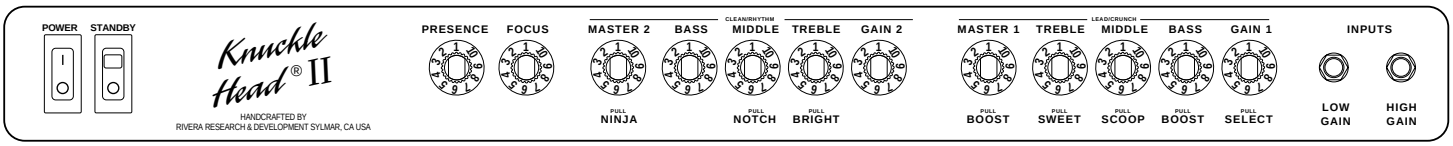
The following illustrations will help you to properly connect your KnuckleHead II to other amps, extension speaker cabinets, and recording and P.A. gear. Make sure the amp and all other gear are turned off whenever you make or change any connections.

Driving an extension speaker cabinet

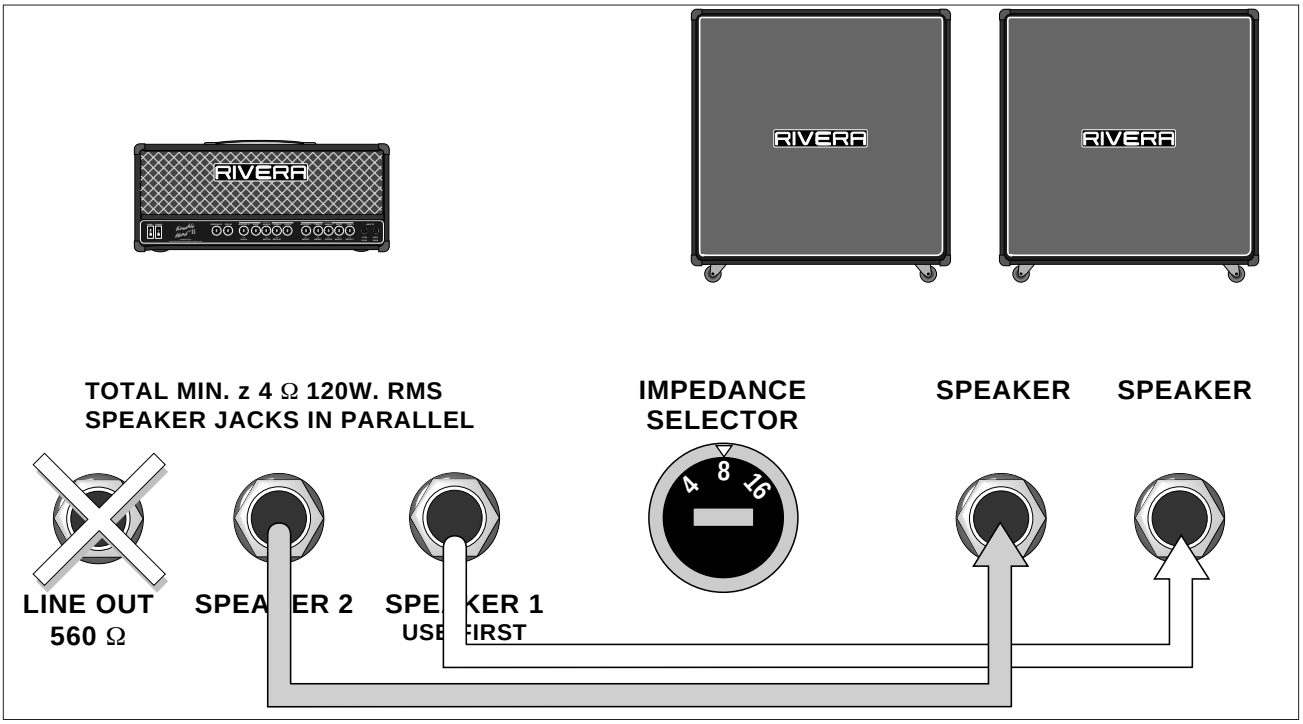


Using a heavy-gauge speaker cord, connect the output jack labeled Speaker 1 to the speaker input on an extension cabinet with a minimum of a 4-ohm impedance and power-handling capacity of at least 120 watts for the KnuckleHead II. A single 8- or 16-ohm extension cabinet can be used, too. For the best tone and maximum output, we recommend using a RIVERA K412 or K212 speaker cabinet.

Note: Regardless of the type or number of speaker cabinets you use, always make sure that the KnuckleHead II's Impedance Selector is set to match the speaker cabinet's impedance.

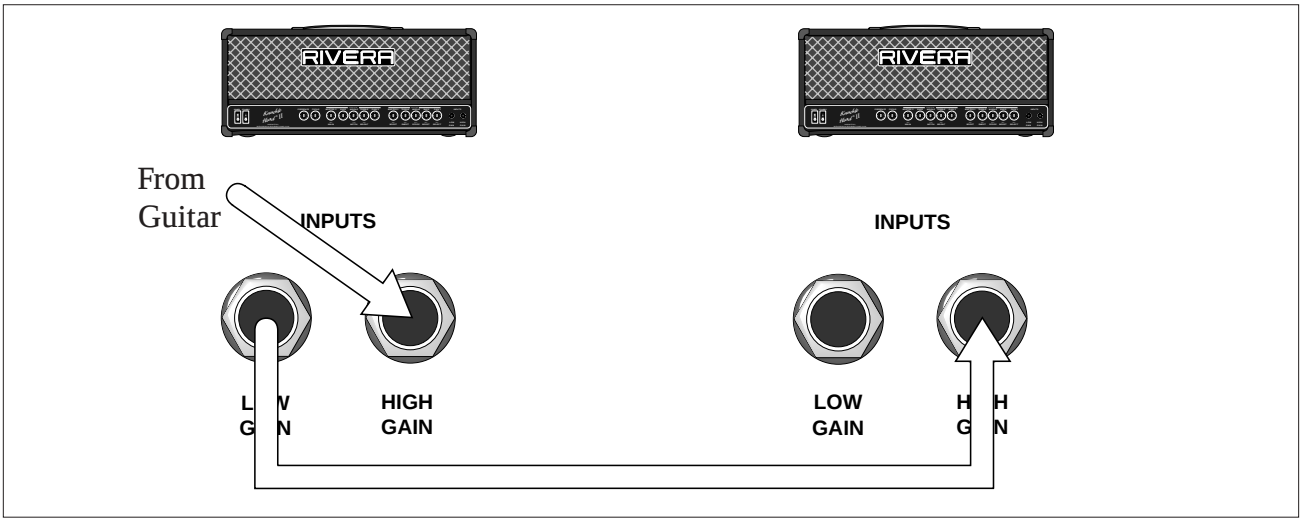


Driving two speaker cabinets

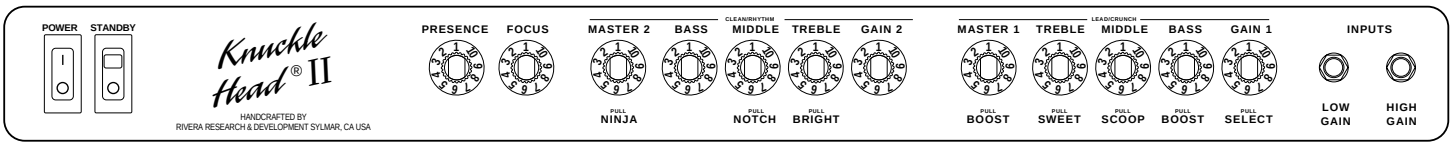


In this configuration, the KnuckleHead II is driving two speaker cabinets with identical impedances. Using heavy-gauge speaker cords, connect the output jacks labeled Speaker 1 and Speaker 2 to the speaker inputs on extension cabinets with a minimum 8-ohm impedance and power-handling capacity of 120 watts for the KnuckleHead II. You can also hook up two 16-ohm cabinets, but never use two 4-ohm cabinets, because the overall impedance load will be too low for the amplifier and could result in damage. When using two 8-ohm cabinets, set the KnuckleHead II's Impedance Selector to 4 ohms.When using two 16-ohm cabinets, set it to 8 ohms.

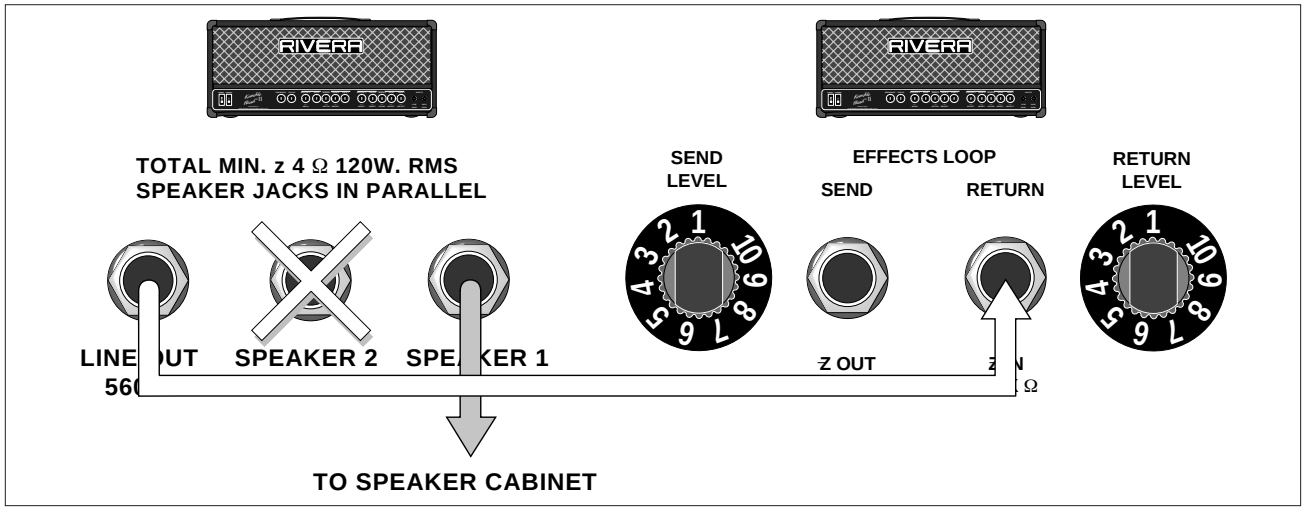
Running two amps in parallel without a Y-cord



The preamp and output amp sections, as well as all controls, function normally in this setup. Use a shielded cord. Note: Make sure speaker cabinets are connected to both KnuckleHead IIs.

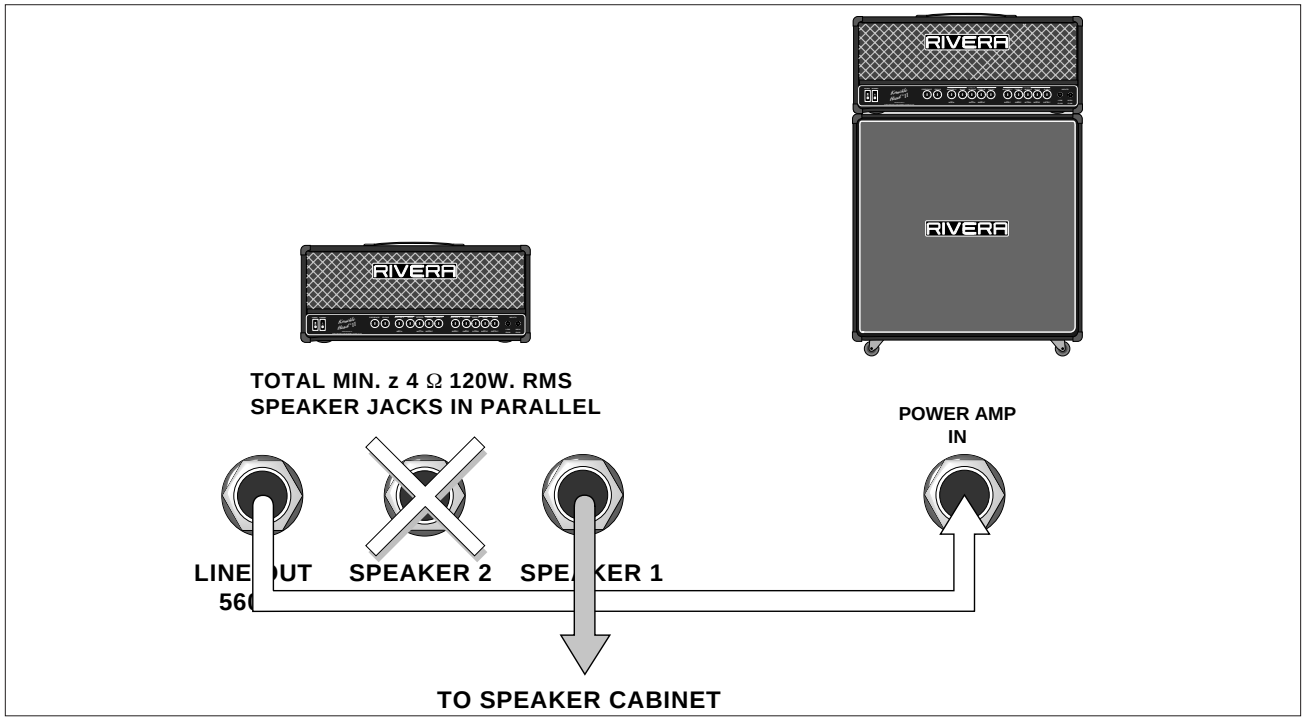


Slaving a second KnuckleHead II

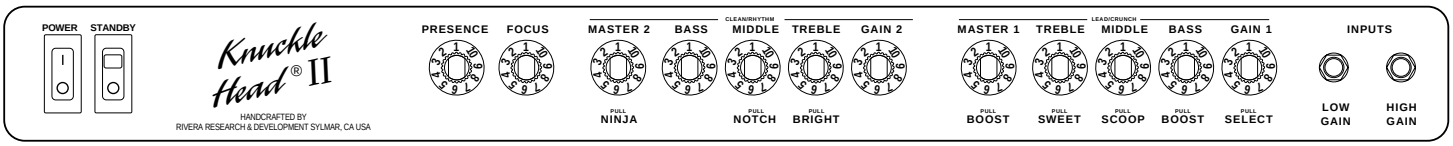


Using a shielded cord, connect the first KnuckleHead II's Line Out to the Effects Loop Return jack on a second KnuckleHead. Adjusting the Return Level sets the relative volume of the second amp. All tone and distortion adjustments are made by the first amp. Alternatively, you can use the Effects Loop Send jack from the first amp instead of its Line Out. The Send Level control sets the signal level being sent to the second amp. Note: Make sure that at least one speaker cabinet is connected to each amp at all times.

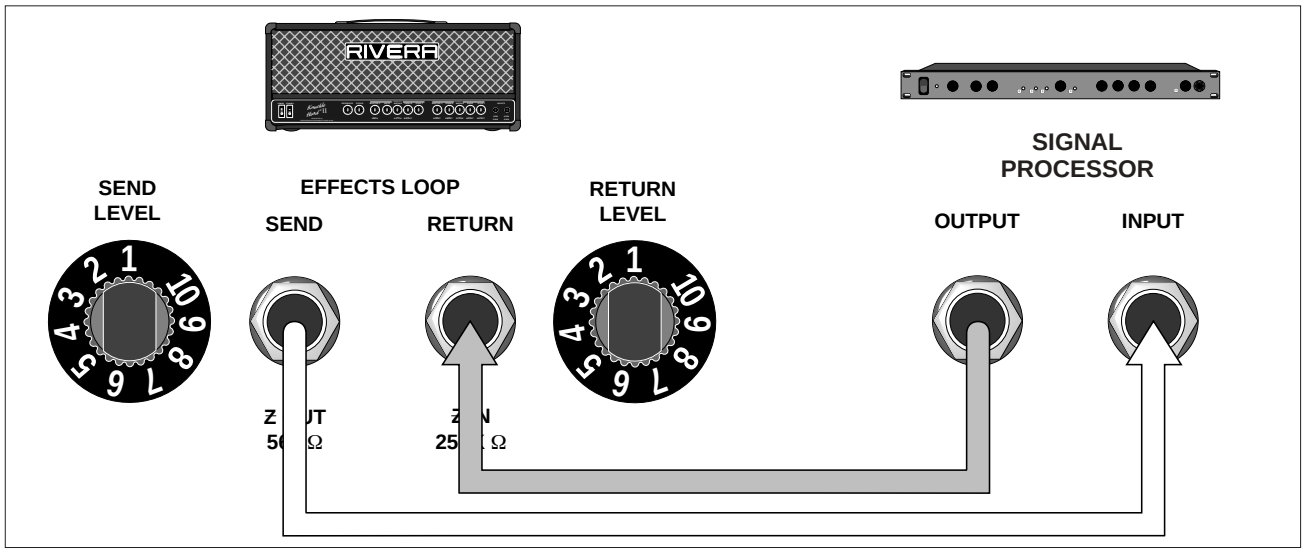
Slaving a second amp or power amp



Connect a shielded cord from your KnuckleHead II's Line Out to the Power Amp In or Effects Loop Return of a second amp. All volume and tone changes made on the KnuckleHead II will affect what comes out of the second amp. Caution: Never use the speaker outputs as line outputs. Their power level is extremely high and can cause tremendous damage to another amp's input. If you don't have any effects patched into the KnuckleHead II's Effects Loop, you can use its Send jack instead of the Line Out. The Send Level knob then acts as a variable output level.

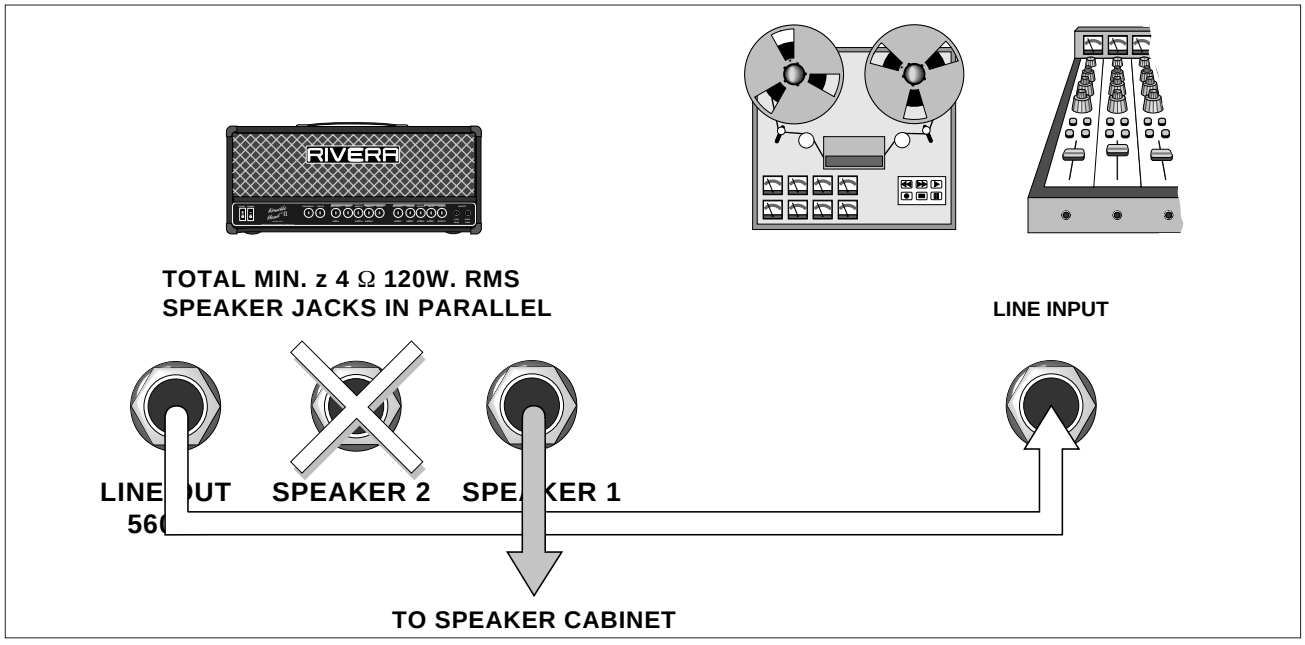


Placing a signal processor in the effects loop

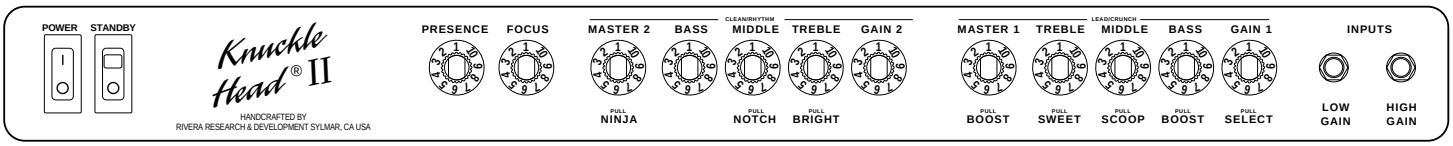


Using shielded cords, connect the Effects Loop Send to the processor's input, and the processor's output to the Effects Loop Return. Adjust the mixture of effect/non-effect sounds at the signal processor, and set the levels at the amp and processor for lowest distortion. If you use multiple signal processors, connect them in series (processor 1's output to processor 2's input, etc.), and patch the KnuckleHead II's Send to the first processor's input and the KnuckleHead II's Return to the last processor's output. If the processor has stereo outputs, you can connect one to the Effects Loop Return of a second amp.

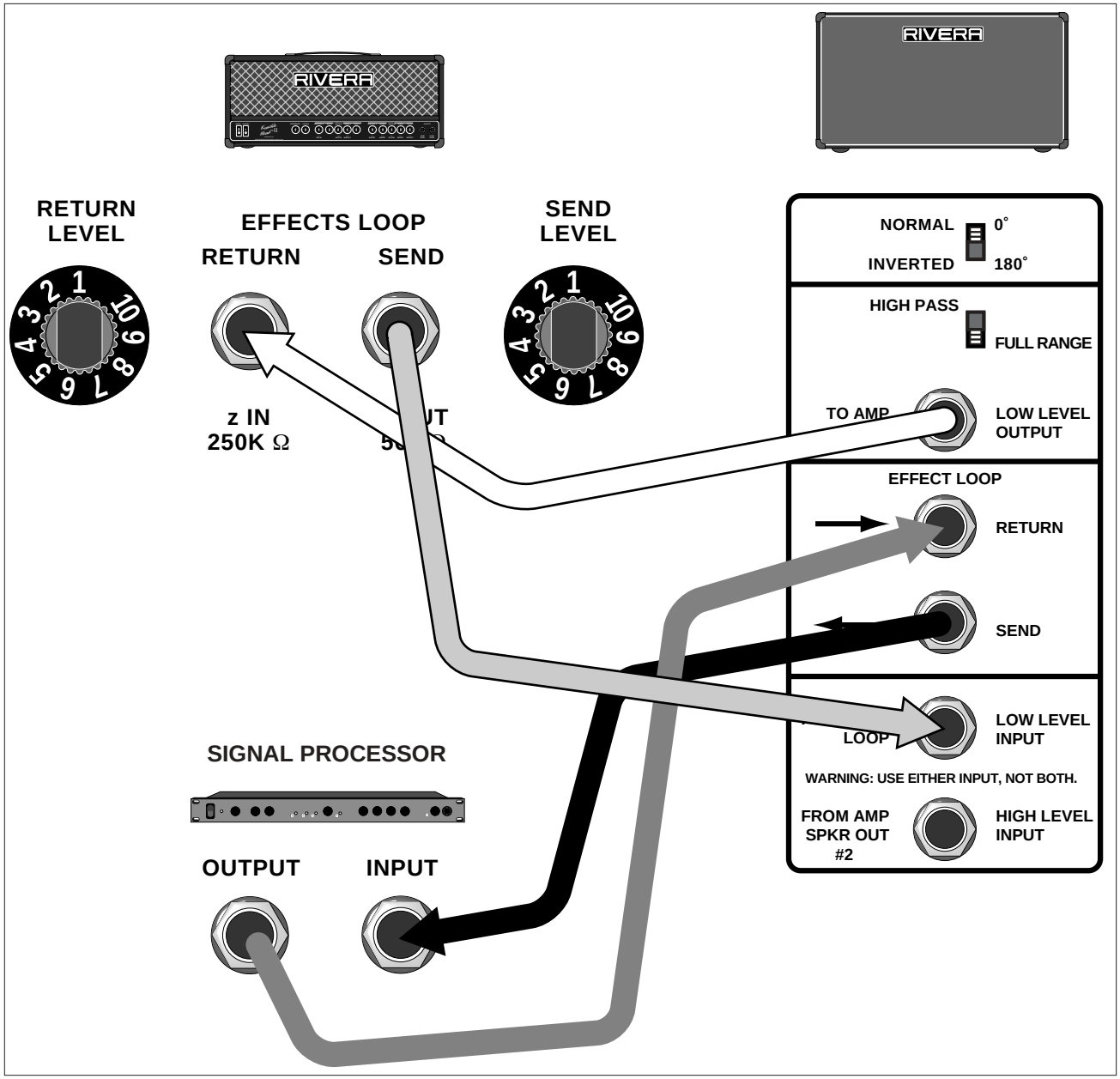
Sending a direct signal to P.A. or recording gear



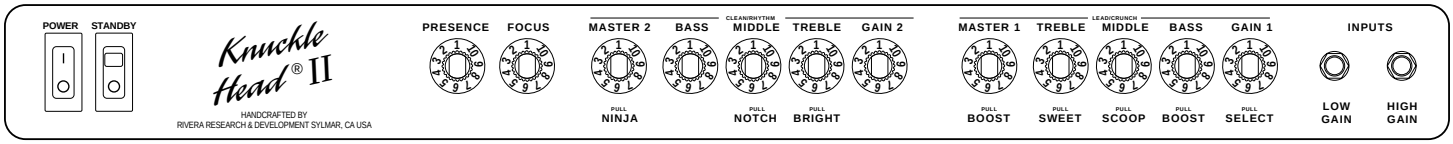
Using a shielded cord, connect the KnuckleHead II's Line Out to the line input or channel input of a mixer or recorder. (The signal comes from the amp's output stage, so all tone, distortion, and overdrive characteristics are included.) You can use the Effects Loop Send jack instead of the Line Out, too. Caution: Never use the speaker output.



Connecting a KnuckleHead II to a Sub 1 or Sub 2



Using a shielded cord, connect the KnuckleHead II's Effects Loop Send jack to the Low Level input of the Sub 1 or Sub 2. Use two more shielded cables to connect the Sub's Effects Loop Send to the input of your effects unit, and from the effects unit's output to the Sub's Effects Loop Return. Add one more shielded cord from the Sub's Low Level Output to the KnuckleHead II's Effects Return jack . The connections are complete. Set the Sub's Phase switch to either 0˚ or 180˚ depending on which setting sounds the loudest. To biamplify the signal returning to the amp's power amp section, set the Filter switch to the "High Pass" setting. This filters the returning signal so that only the high and mid frequencies come through the amp's speaker(s). By setting the Filter switch to "Full Range," your signal remains unfiltered, returning all of the signal's frequencies to the amp. To set the Sub's volume output, play your guitar and dial up the pot until the signal clips (indicated by the green LED light turning red), and then turn down the level just enough so that it no longer clips (the LED remains green).



CARE & TROUBLESHOOTING

Chances are, you bought your RIVERA amp to make your guitar sound great, not to improve your skills with electronics. What we're saying is, "If something ever goes wrong with your amp, don't try to fix it yourself." There are some potentially lethal high voltages inside the amp, plus if you do something that causes even more damage than when you started out, the person who does the real repair will probably tell you, "Hey, I know what's wrong. Somebody's been monkeying around in here." And, of course, your warranty will be void.

There are some things you can do to keep your amp running and to determine (and hopefully remedy) common difficulties.

Keep the amp out of the elements. A lot of this is common sense. Don't use your amp in a sauna or in the bathtub. Don't leave it out in the rain or in a damp basement. If you take it to a gig or to practice and it's cold out, give it 15 minutes or a half-hour to stand in the room where you'll be playing. That way, it can get acclimated and sound its best when you're ready to play.

Be nice to it. The jury is still out on whether talking to plants makes them happy, or whether Elvis lives on the moon, but the verdict on pampering amps is well-known. Don't drop, knock over, kick, or otherwise mistreat your amp. If you don't have a flight case for travel, use the box it came in, or wrap it in something thick, soft, and protective. RIVERA amps are built to take a lot, but why push it? If you treat your amp well, it will treat you (and your guitar's tone) well.

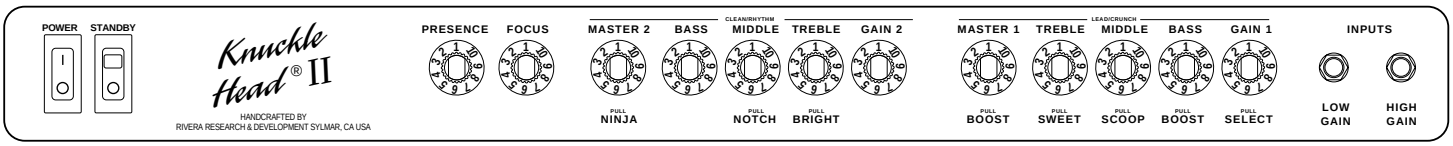
Check for loose tubes. Here's as close as you should get to being inside your amp. With the amp unplugged and cooled off, examine the tubes to make sure they're in tight and straight. Note: Unlike light bulbs, tubes push straight into their sockets. Never try to twist them! Also note that some of the tubes are inside of metal sleeves. These are easy to remove for checking the tubes. Grasp the sleeve with your fingers and depress it (it's spring-loaded) and turn to the left (counterclockwise). Now pull it off; this may require a little wiggling action. Remember to put the sleeve back on after you check the tube.

Make sure the power cord is tightly plugged in. This is critical at both ends of the cord. And don't use one of those 3-pin-to-2-pin adapters unless you connect the ground lug to the outlet. Leaving the ground disconnected isn't just cheating—it's dangerous to unground any electrical device that's supposed to be grounded.

Let it idle before you play. If you have a few minutes to spare before you play, turn the amp on and set it to standby so that all the parts can get warmed up and stable. Once the amp's nice and warm (5 or 10 minutes), flip the Standby switch and get busy on your guitar.

Don't use the back of the cabinet as a storage locker. Remember, there are glass tubes in there. They cost money to replace (money that's better spent on strings, picks, etc., right?). Stash your other gear in a bag or a case for travel.

Clean your amp once in a while. You can use a damp cloth or one dipped in a weak solution of dishwashing detergent and water (lots of water!) to wipe off grime, dried Pepsi, and whatever else accumulates on the vinyl covering. Make sure the amp is unplugged first. Everything else can be vacuumed, as long as you're gentle and use a soft-bristled brush attachment on the vacuum hose.



QUICK TROUBLESHOOTING GUIDE

Amp won't turn on

1. Make sure that the AC mains cord is securely connected at both ends.
2. Verify the power source with something that you know works (a radio, a light, etc.).
3. Check the Mains Fuse, and replace it if necessary (if it blows again, refer your amp to qualified service personnel)

There's no sound

1. Make sure that the guitar cord to the input is okay (wiggle it—check your guitar's volume setting, too).
2. Check the Gain controls.
3. Check the Standby switch.
4. If an effect or signal processor is plugged into the Effects Loop, make sure it's turned on and that the level controls on the amp and processor are set correctly.
5. Check the speaker cable or cables to see if they are disconnected or shorted.
6. Check for blown speakers.
7. If a fuse is blown, replace it (if it blows again, refer your amp to qualified service personnel).

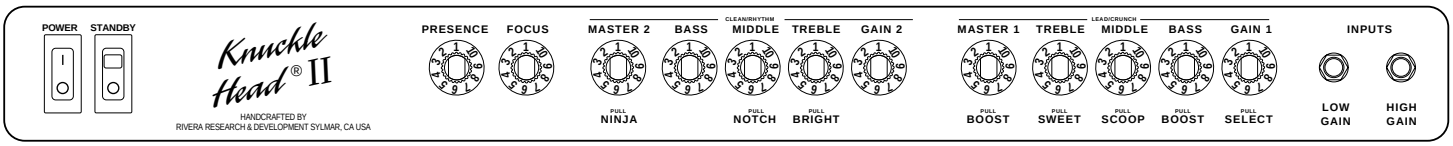
The amp shuts down unexpectedly

1. Follow the seven steps in the "There's no sound" section.
2. Turn off the amp and wait 25 minutes before turning it on again. An internal thermal protection circuit can shut the amp down if it becomes overheated.
3. After 25 minutes, turn it on, and if it shuts down again, refer the amp to qualified service personnel.

Note: On SEMKO 230-volt models, there are two additional T1.6A (250-volt Slo-Blo type, 5mm x 20mm) fuses and one T10A (250-volt Slo-Blo type, 5mm x 20mm) fuse located internally. These protect the amp's output tube filaments and should only be replaced by qualified service personnel.

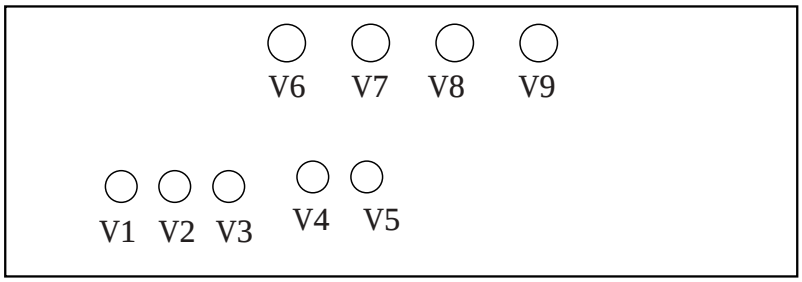
There's unwanted distortion

1. Check the speaker.
2. Check the cables.
3. Check the signal level at other devices in the signal path.
4. One or more tubes may be bad (refer to the tube information on page 17, or take your amp to qualified service personnel).



TUBE CARE & REPLACEMENT

Like a sports car, there's a certain amount of wear and tear to be expected in a high-performance tube amp. Over time, especially with hard use, tubes may need replacement. That's why it's a good idea to make note of when you purchased your amp and whenever you replace tubes. It's no accident that your amp has two common types of tubes: They're great-sounding and reliable, and it's easy to find replacements. Here's a tube chart to show you which tubes go where.



Location	Type
V1	12AX7 (WA/WB)
V2	12AX7 (LP/LPS)
V3	12AX7 (WA/WB)
V4	12AX7 (WA/WB)
V5	12AX7 (LP/LPS)
V6	6L6 or EL-34
V7	6L6 or EL-34
V8	6L6 or EL-34
V9	6L6 or EL-34

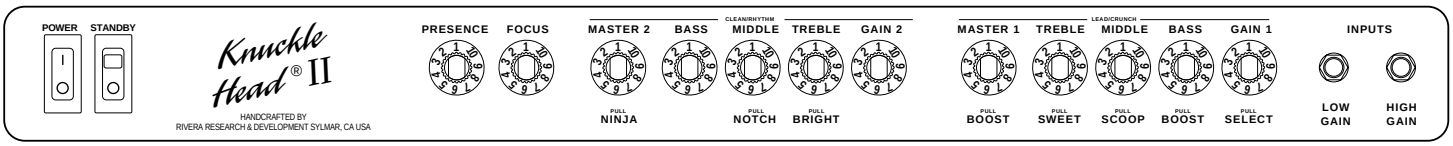
Here's a brief description of what each tube does:

V1	Input buffer and tone control driver for Rhythm Ch., and also the first preamp stage of Lead Ch.
V2	Tone control follower for Rhythm Ch. and an additional gain stage for Lead Ch.
V3	Third gain stage for Lead Ch. and final gain stage for Rhythm Ch.
V4	Final gain stage for Lead Ch. and mixer for both channels
V5	Phase inverter driver tube for the power amp section
V6 - V9	Power amp tubes—for best operation, all power tubes should be changed at the same time

Checking for microphonic tubes

As tubes wear, some problems can come up. One of the most common symptoms is a ringing sound. This is usually due to the tube becoming microphonic (like its name suggests, it's picking up sound and amplifying it).

With the amp unplugged and cooled off, examine the tubes to make sure they're in tight and straight. Never twist them! Gently grasp the tube and wiggle it into place. Because some of the tubes are inside of metal sleeves, you will have to remove the sleeves to check them for microphonics. Grasp the sleeve with your fingers and depress it (it's spring-loaded) and turn to the left (counterclockwise). Now pull it off; this may require a little wiggling action.



Preamp tube first aid

If you hear ringing (a feedback-like high-pitched sound) in your amp, it's probably coming from a preamp tube. Here's a procedure to find which tube is giving you trouble.

With nothing plugged into either the High Gain or Low Gain inputs, and the Master controls turned down to 5 or below, turn the amp on.

Turn up the Gain on both channels. Now use the tip of a pencil to gently tap the end of each of the small tubes (V1 through V5) and listen for sustained ringing. Turn up the Gain and Master knobs and keep tapping until you find the tube that rings (or squeals).

Turn off the amp, and allow the tubes to cool. Now pull out the troublesome tube and replace it with one of the same value (that is, if you're pulling out a 12AX7, replace it with a 12AX7).

Testing a preamp tube: Tap gently and listen for ringing.

Make sure that the tube is oriented correctly when pulling it out or putting it back in. If you look at the end of the tube and the socket, you'll notice that the nine pins are arranged in an incomplete circle. Always make sure the pins are aligned correctly. Never force a tube into its socket.

Remember to put the sleeve back on after you check or replace a tube.

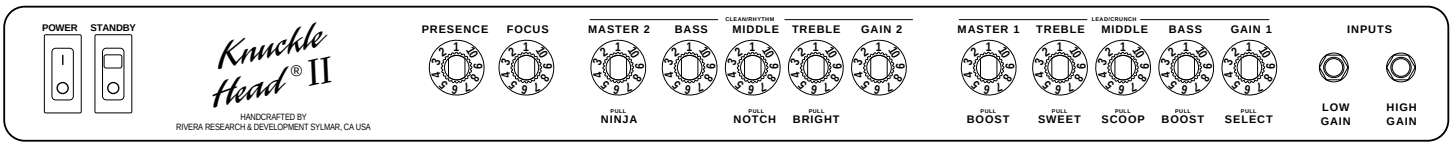
Power amp tube first aid

Like preamp tubes, power amp tubes can go bad or wear out. Your KnuckleHead II has four power amp tubes, and if one goes bad, they should all be replaced. This assures optimum output and tone.

If a power tube shorts out, the HT Fuse will be blown. Remove power from the amp and replace the fuse before doing the following:

1. Remove the power tubes. Remember the way the eight pins are arranged, and note that the center hole on the socket has a keyway that matches the center post on the tube.
2. Replace one tube. Turn the amp on. If the fuse blows (or the tube glows cherry red, indicating an internal short), you've found the bad tube. Turn off the amp immediately. If the fuse doesn't blow, replace another tube and turn the amp on again. Repeat this procedure until you've determined which tube is bad.
3. When the tubes have cooled, remove them. Replace all four tubes. (Don't throw away the good tubes from the old set, though—save them as spares!)

Grip the tube firmly and then wiggle it out of its socket.



Tube Types and Manufacturers

12AX7 types. As of 2003, we use a combination of Sovtek types. 12AX7WA tubes are used along with 12AX7LP and 12AX7LPS. By combining these two tube types, we have been able to maximize the amp's performance. Our earlier amps, starting in 1985, used Chinese 12AX7 tubes. These tubes have higher gain and more high end than the Sovtek types. However, when the Chinese tubes went out of production in the mid 1990s, we researched what was available and tried them all. There is the JJ 12AX7, but it seems to have lower gain and really weird failure modes. Yugoslavia made 12AX7 tubes sound decent, but suffer from microphonic issues. China has recently begun producing the 12AX7 again, but the number of usable tubes is low, due to microphonic qualities. Position V4 has a cathode-follower circuit, and we have found that the 12AX7WA/WB types are the best for this position.

As far as NOS (new old-stock) European types go, the Mullard and Philips-Holland 12AX7A, 7025, and 6681 were wonderful, as were those made by Telefunken.. Unfortunately, there are a lot of unscrupulous sellers who demand outrageous prices for tubes of dubious quality or even correct manufacture. Buyer beware!

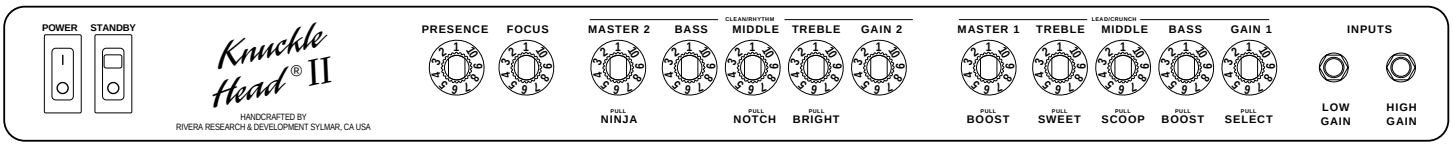
6L6GC and EL-34. We are using Svetlana 6L6GC and EL-34 tubes, and have found them to be the most reliable of what is available.

Biasing

Your amplifier was shipped with a matched quartet of power output tubes. These tubes have been rated by us and are marked on a foil label at the tube base (EL-34) on a scale of 6 to 12, or on 6L6GC with a written number on the tube base as well as the top of the tube envelope. If you replace the tubes with Rivera tubes of the same rating, it is not necessary to re-bias the amp. However, if you are using other-value Rivera tubes, or tubes from another manufacturer, it is wise to have the bias checked and adjusted. We have made it quite easy to do, but due to hazardous and potentially lethal voltages being in the chassis, we strongly advise that you have an experienced and qualified technician perform this procedure.

All Rivera amplifiers since 1985 have been equipped with a built-in standby switch in the Speaker Jack #1. This was for two reasons: (1) It is not uncommon for users to forget to connect a speaker load before turning on the amp and attempting to play. In most amps this would fry the output transformer and arc the output tube sockets. (2) This switch lifts the cathodes of the output tubes when a plug is not inserted into the Speaker Jack #1. By connecting a DC current meter from Pin 8 of the output tubes to the chassis ground, without a plug in the Speaker Jack #1, the cathode current for all four output tubes will flow through the meter, giving an accurate indication of the total DC current (the cathodes are connected in parallel, and the reading is for all four tubes). This is measured at idle with no signal present.

On the motherboard is a trim potentiometer that is intended for setting the bias voltage. At nominal Mains voltage (115VAC USA, 230VAC Europe/Scandinavia, 250VAC UK and Australia), this is when the bias current is measured. Use a Variac to adjust the Mains to be at rated nominal voltage as labeled on the back of your amplifier. If you do not have a Variac to adjust the Mains to the correct voltage, you can compensate in your calculations and measurement. For example, if your nominal mains voltage should be 115, and you measure a high Mains condition, like 122VAC, this is almost 10% higher. This means your measured current would be around 10% higher than normal and should be adjusted to that. Conversely, if the Mains voltage measures at 105, you would lessen the idle current so that it was approximately 10% less. Adjust for 165mA DC at rated nominal Mains voltage. Some output tubes, like JJ/Tesla run very hot and may require less idle current to run reliably.



KnuckleHead II Specifications

High-gain input impedance: 1 Megohm
Low-gain input impedance: 33k ohms
Output impedance: Selectable, 4 ohms, 8 ohms, or 16 ohms
Line output impedance: 330 ohms minimum
Total harmonic distortion: 5% or greater at rated power
Bandwidth: 40 Hz to 20kHz
Preamp tubes: Five 12AX7A
Output tubes: Four 6L6GC or EL-34
Tube voltage: 430 volts DC at Idle
Output power: 120 watts RMS into 4 ohms
Operating voltage: 115 volts AC or 230 volts AC (export model), 250 volts AC (U.K. and Australia), or 100 volts AC (Japan only)
Footswitch functions: Channel switching, boost for Lead/Crunch Channel, Ninja Boost
Bias: 165 mA DC at idle, no signal (cathodes are in parallel) measured from Pin 8 to chassis ground, no speaker load connected to speaker jack #1
Height: 10"
Width: 26.75"
Depth: 10"
Weight: 50 lbs
Cabinet material: 3/4"-thick Plywood
Cabinet thickness: 3/4"
Construction: Dadoed joints
Covering: 30-oz. vinyl
Cleaning of vinyl covering: Moist cloth, dishwashing liquid

Because we strive to build the highest-quality product, we reserve the right to change specifications of our products without prior notice.

RIVERA

13310 Ralston Ave.,
Sylmar, CA 91342 USA
Phone: (818) 833-7066
Fax: (818) 833-9656

Email: support@rivera.com
http://www.rivera.com

RIVERA

13310 Ralston Ave.,
Sylmar, CA 91342 USA
Phone: (818) 833-7066
Fax: (818) 833-9656

Email: support@rivera.com
http://www.rivera.com